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Jamming of Granular Materials in Wedge Hoppers[1] SUMMER SARAF, SCOTT FRANKLIN, Rochester Institute of Technology — We study the jamming of ordinary and rod-like granular materials in wedge-shaped hoppers and compare the probability distributions for exit mass with those obtained from cylindrical hoppers. While cylindrical hoppers show an exponential probability distribution, we find that the rectangular exit aperture of wedge-shaped hoppers exhibit a power law decay for both spheres and rods. This behavior can be explained with a model of the rectangular exit aperture as composed of a series of round, adjacent apertures each with a statistically independent jamming probability. We speculate that the spatially varying jamming probability results from inhomogeneities in the granular material, with regions of the material more tightly packed than others, and thus more likely to jam.

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